

Recently, there have been cases of *E. coli* illness associated with the consumption of unpasteurized apple juice and cider. *E. coli* is a bacteria that normally resides in the intestines of humans and animals. There are many strains of *E. coli* that are harmless, but some strains, including *E. coli* 0157:H7, can cause foodborne illness.

Other food and drink items that have caused *E. coli* illness include: undercooked hamburger and roast beef, unpasteurized milk and milk products, contaminated water, and vegetables grown in cow manure.

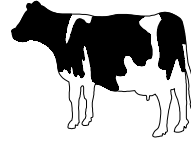
Transmission

There are several different ways *E. coli* 0157:H7 bacteria are transmitted to food or drinks.

- The bacteria may be on the surface of apples used to produce juice/cider and can be introduced into the product during processing. The bacteria are killed during pasteurization, but may survive in products that are unpasteurized.
- Contamination of meat may occur as part of the slaughtering process of cattle. *E. coli* is killed when meat is thoroughly cooked, but it may survive in meat that is rare, or inadequately cooked.
- Other foods can become contaminated with *E. coli* 0157:H7 bacteria through cross-contamination from raw meat.



- The bacteria may be present in dairy cows, thus drinking unpasteurized milk, or eating products made from unpasteurized milk, may also cause illness.



- Secondary infection, or transmission of the bacteria from an infected person to a person who has not consumed contaminated food or drink, is also possible. Secondary infection occurs through the fecal-oral route when handwashing is inadequate.

Symptoms

E. coli 0157:H7 causes a gastrointestinal infection. Once in your body, the bacteria produce a toxin or poison. An incubation period, or period of time from consumption of food or drink contaminated with bacteria until symptoms first occur, of 2-4 days is most common, but may be as long as 9 days. At first the illness may feel like an intestinal flu, but the flu should not cause the sort of severe stomach pains or cramping associated with *E. coli* infection.

Symptoms include: abdominal pain, cramps, mild fever, and watery diarrhea. Vomiting and nausea are also common. On approximately the fourth day of illness, painful bloody diarrhea is common.

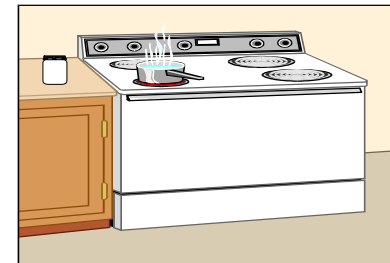
Complications may occur—especially in children, elderly persons, and persons with deficient immune systems. This includes people with HIV/AIDS, and people on immunosuppressive therapy (i.e. cancer treatments, transplant recipients, etc.).

Fresh Apple Juice & Cider

E. coli 0157:H7 lives primarily in the intestinal tract of animals and may be spread through fertilizer, or by direct contact with animal feces. Contamination of apples can occur in the field from irrigation water, manure, or windfall apples landing in animal feces.

All-natural juices or ciders sold in health stores, supermarkets, farmers markets, and roadside stands are generally not pasteurized. If the juice or cider is contaminated with *E. coli* during processing, the *E. coli* bacteria are not destroyed since there is no heat processing or pasteurization of the product.

If you choose to consume unpasteurized juice or cider, it is highly recommended that you boil the product for at least thirty seconds.



Tips For Making Fresh Cider

To help prevent illness (such as illness caused by *E. coli* 0157:H7) from fresh apple cider, follow the following steps during preparation.

- Use only apples picked directly from the tree. Do not use windfall apples.
- Thoroughly clean and sanitize all parts of the apple grinder and press prior to use. Sanitize with a mild bleach solution (1 teaspoon of bleach per gallon of water). The press should be cleaned and sanitized at least every two hours if used continuously.
- Be sure to wash hands thoroughly before handling apples or equipment. Hands should be washed frequently during the pressing process.
- Clean the apples by washing and brushing. Follow the cleaning with a high pressure, water-blast rinse.
- Soak the apples for at least 1 minute in a solution of 1-1/2 teaspoon bleach per gallon of water. (Avoid using scented or color-safe bleaches). This can be followed by a potable water rinse.
- Press the apples to make the cider. Pasteurization, or heating, of the pressed cider is highly recommended. To heat-process the cider, boil it for at least thirty seconds.
- Use only new plastic jugs, or glass jugs that have been cleaned and sanitized. Make sure containers have tight-fitting lids. Do not re-use plastic jugs because they cannot be cleaned and sanitized thoroughly.

- To clean and sanitize glass containers: wash with warm soap and water; rinse. Sanitize by dipping the containers in a mild bleach solution (1 teaspoon of bleach per 3 gallons of water). Allow the containers to air dry.
- Fill containers with cider and keep refrigerated or frozen. Frozen cider retains its quality for at least one year.

Other Tips To Prevent *E. Coli* Illness

- Do not drink fresh (unpasteurized) apple juice, juices containing fresh apple juice, or cider from an unknown source. Pasteurized products will be labeled as pasteurized.
- Drink pasteurized milk and use pasteurized milk products for food preparation.
- Always wash your hands, and wash and sanitize utensils and work surfaces after contact with raw meat products.
- Wash all fruits and vegetables before eating.
- Thoroughly cook all ground beef. Cook until juices run clear, and the middle is no longer pink. The internal temperature of ground beef must reach a minimum of 155° F.

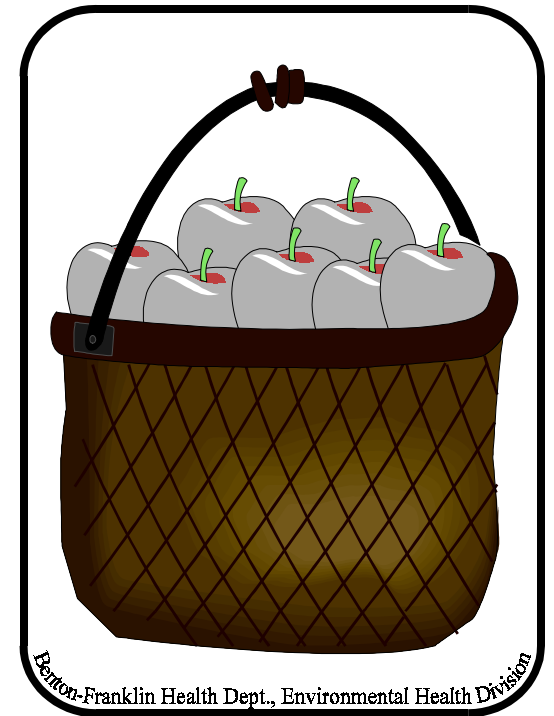


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Seasonal Tips

Fresh Apple Cider or Juice



Benton-Franklin Health Dept., Environmental Health Division

